

Fig. 1

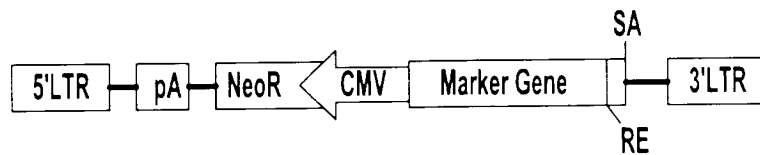


Fig. 2A

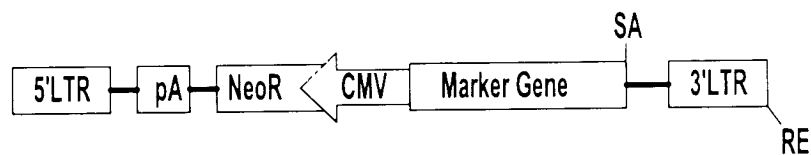


Fig. 2B

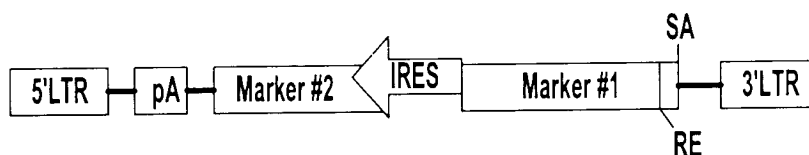


Fig. 2C

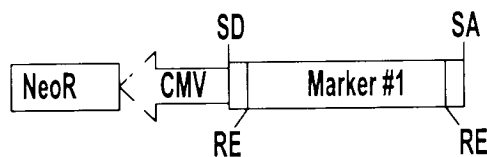


Fig. 2D

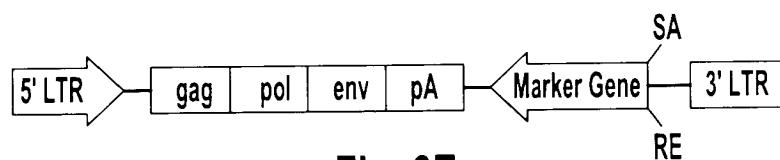


Fig. 2E

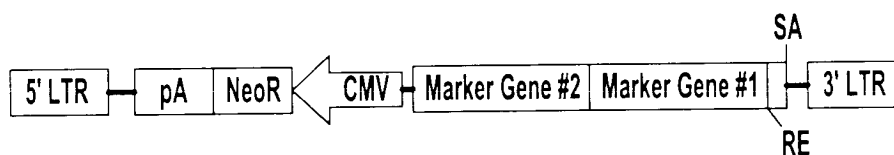


Fig. 2F

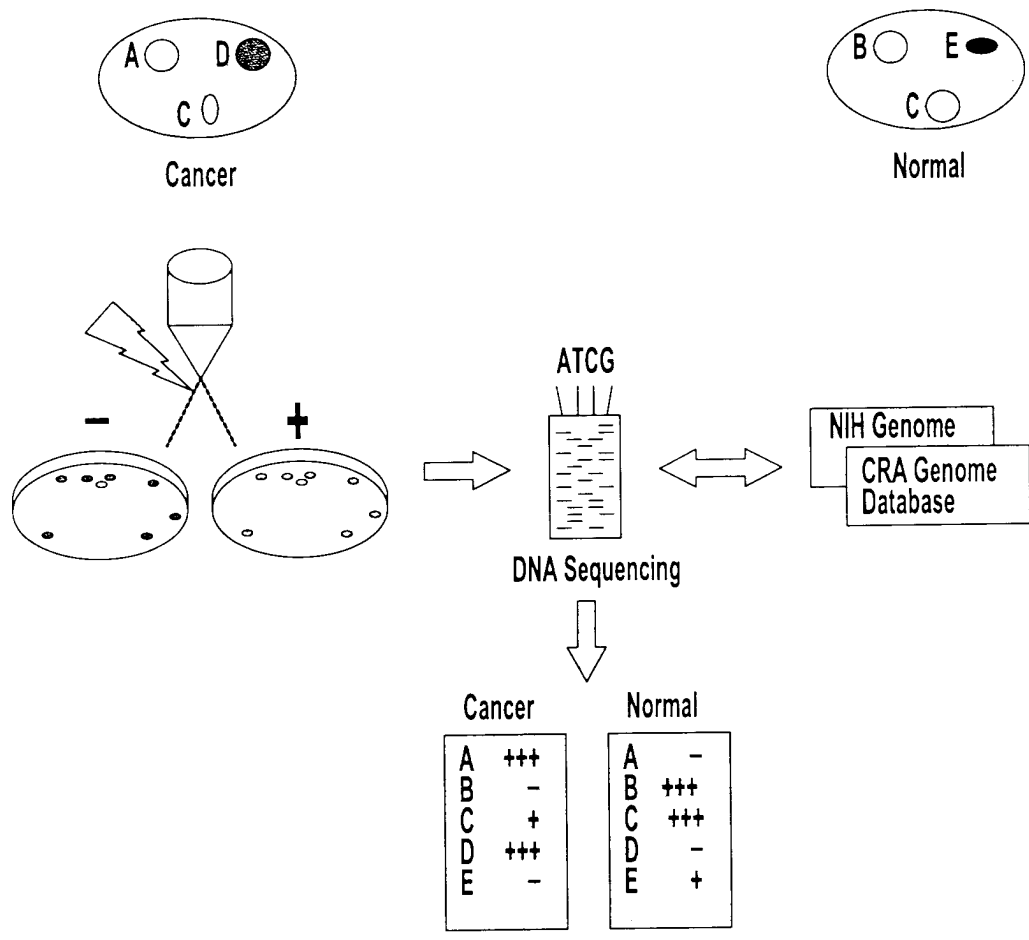


Fig.3

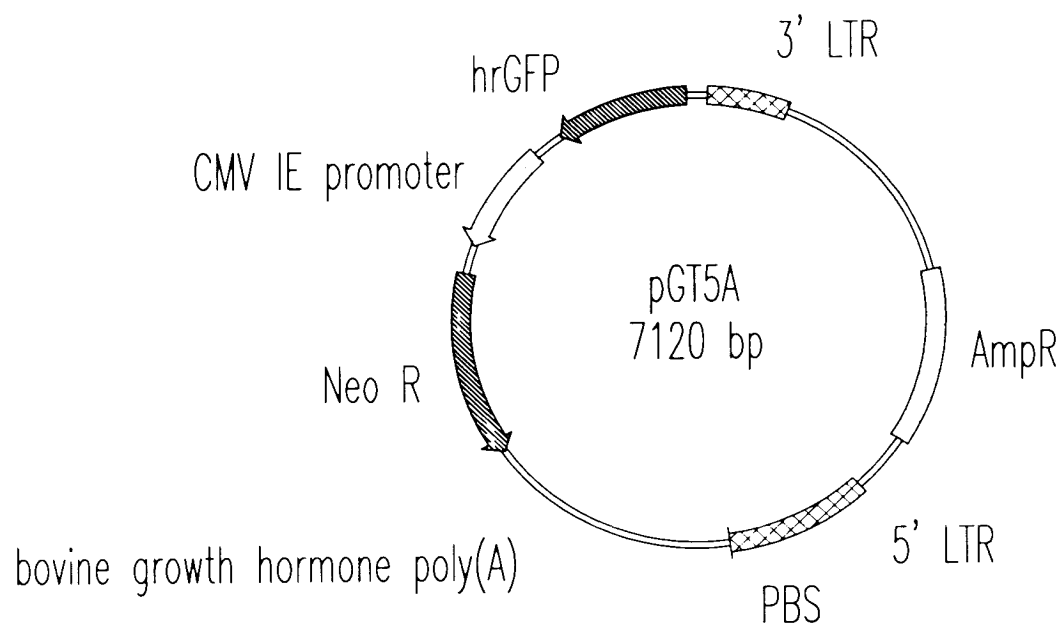


Fig. 4A

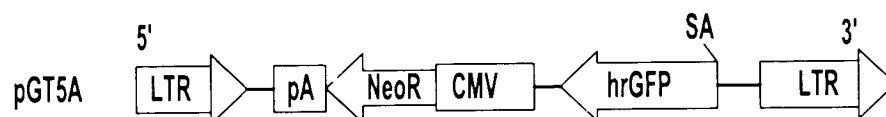


Fig. 4B

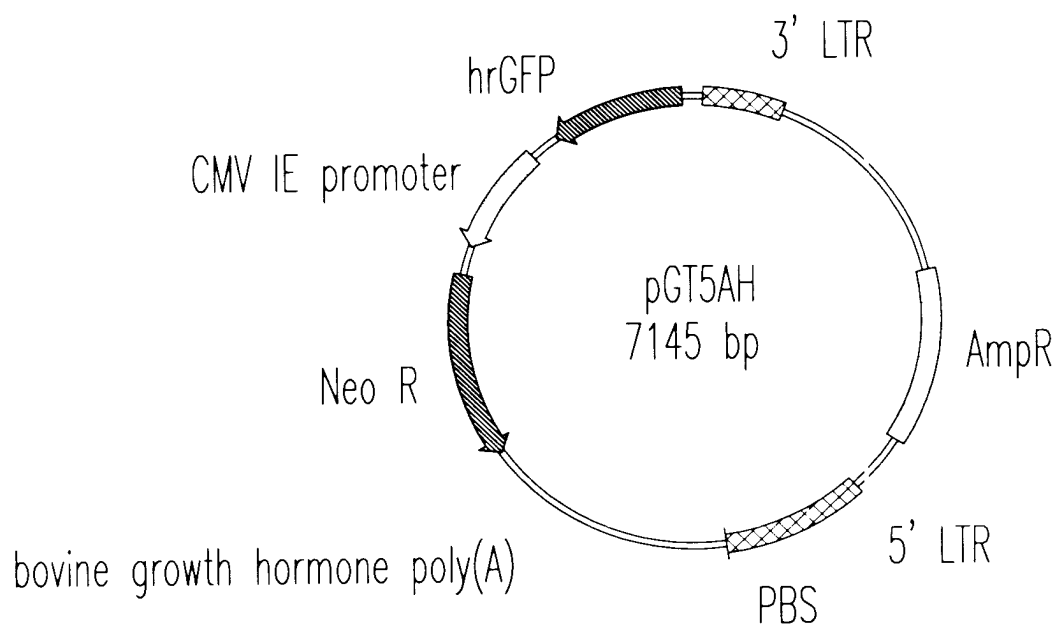


Fig. 5A

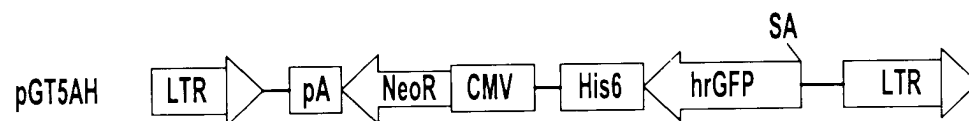


Fig. 5B

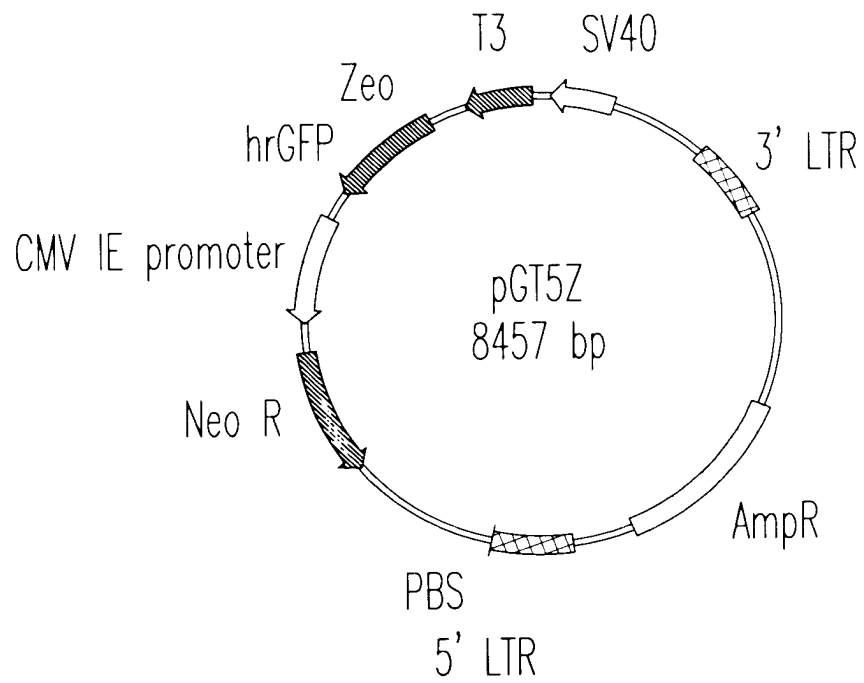


Fig. 6A

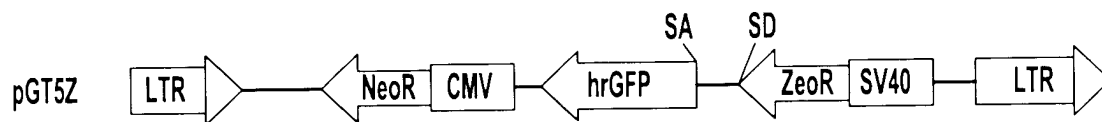


Fig. 6B

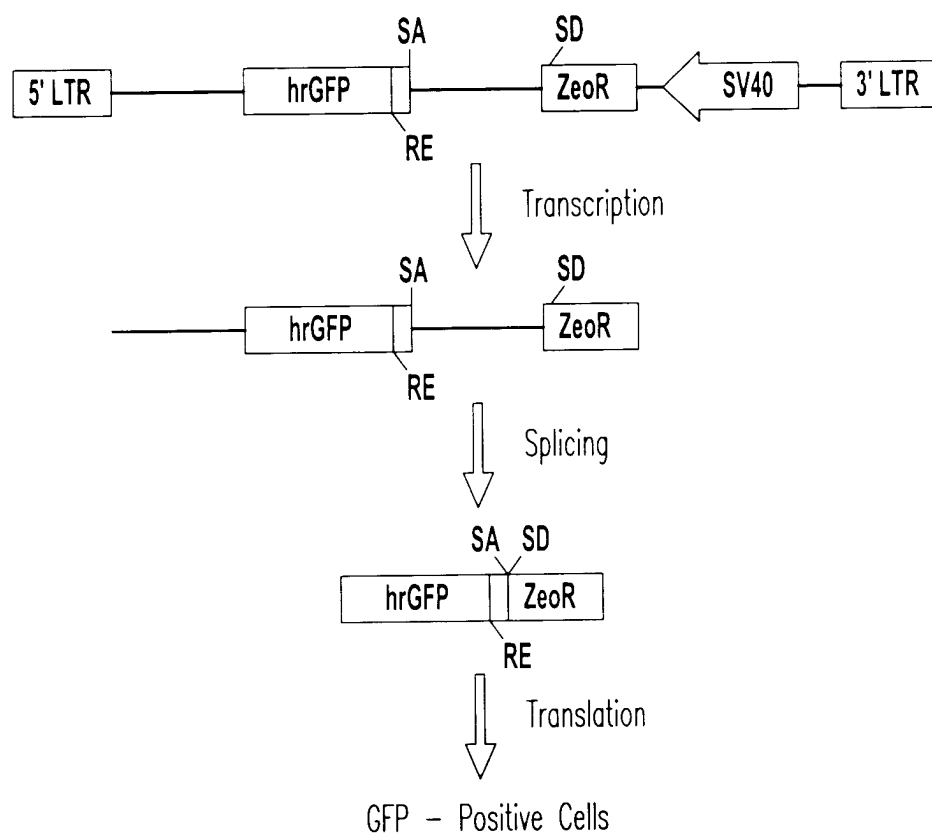


Fig. 7A

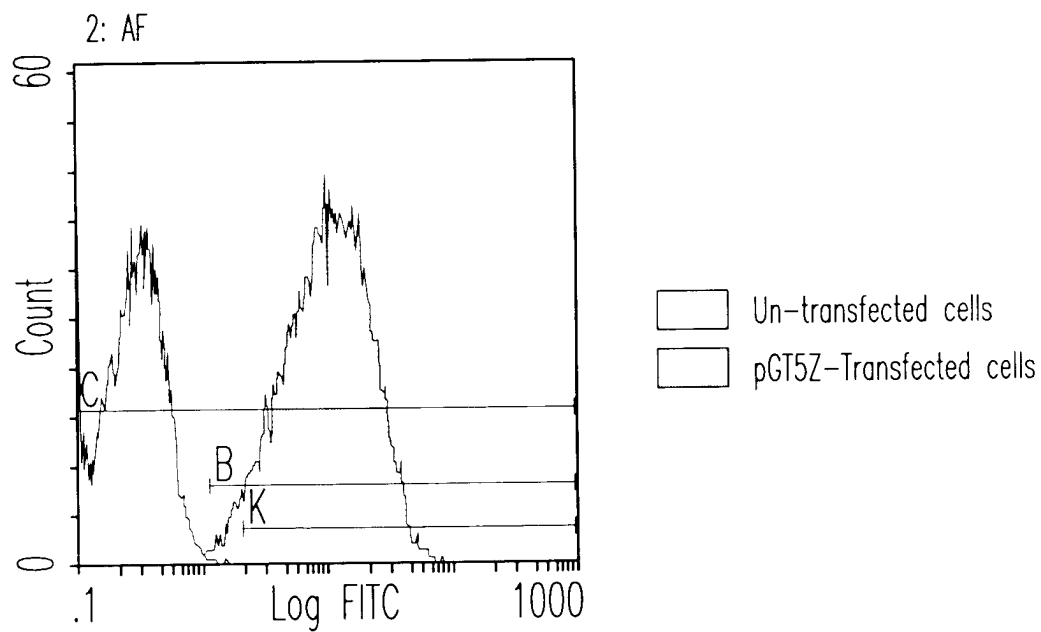
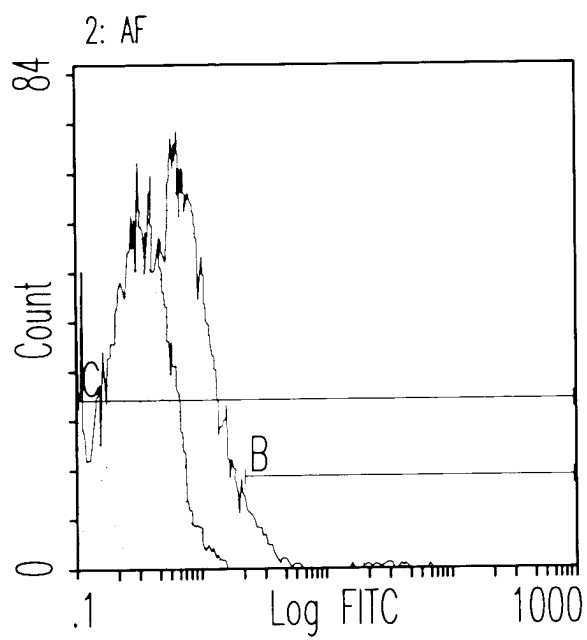
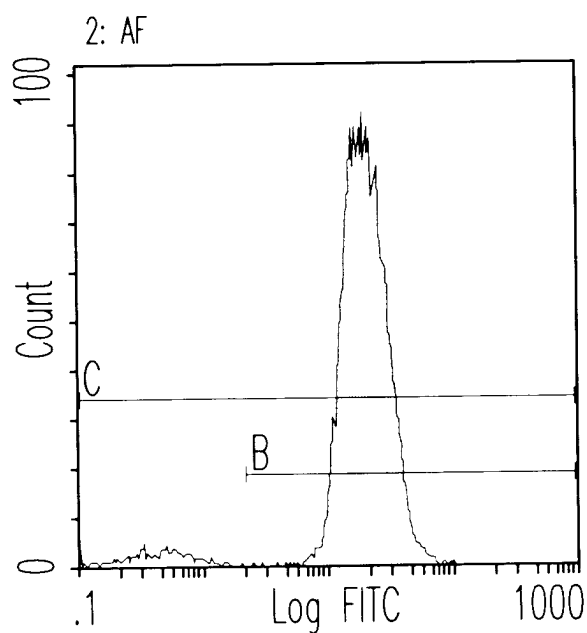


Fig. 7B



- GFP (-) population
- GFP (+) population
- PA317 without transfection

Fig. 8A



- GFP (-) population
- GFP (+) population
- PA317 without transfection

Fig. 8B

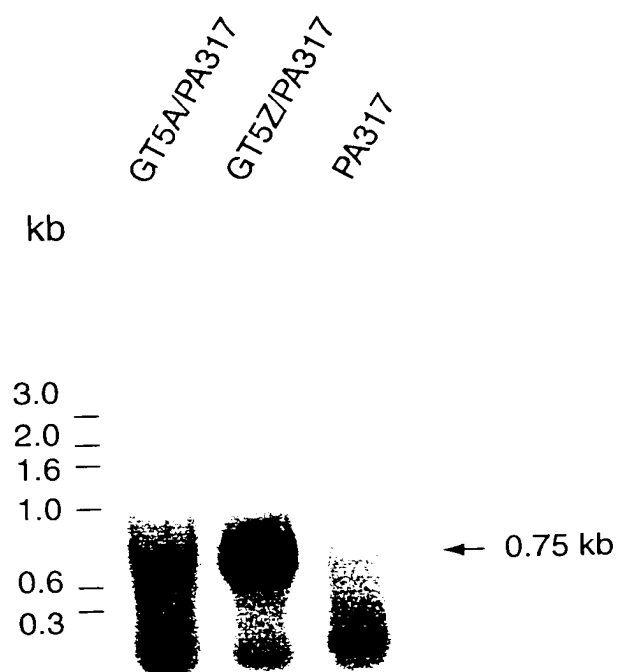


Fig. 9

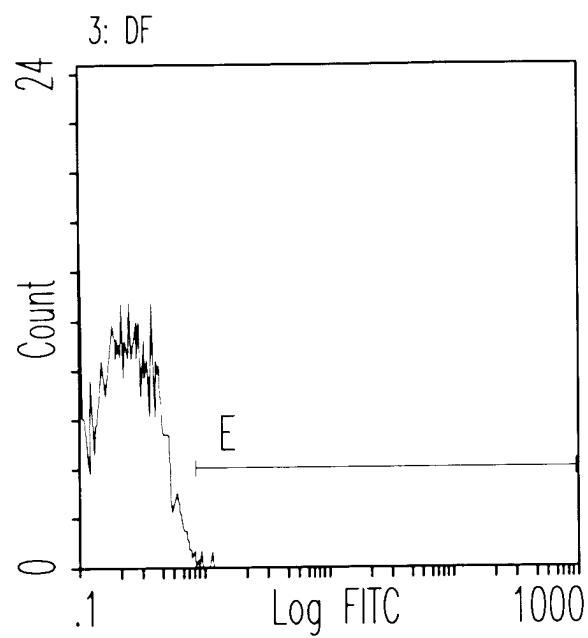


Fig. 10A

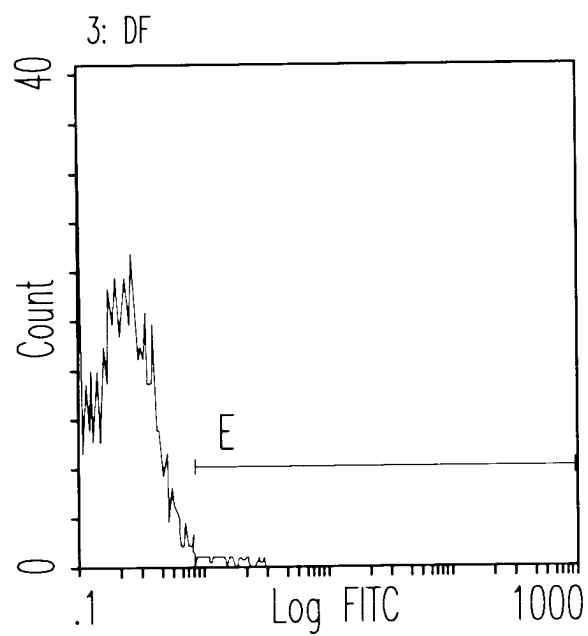


Fig. 10B

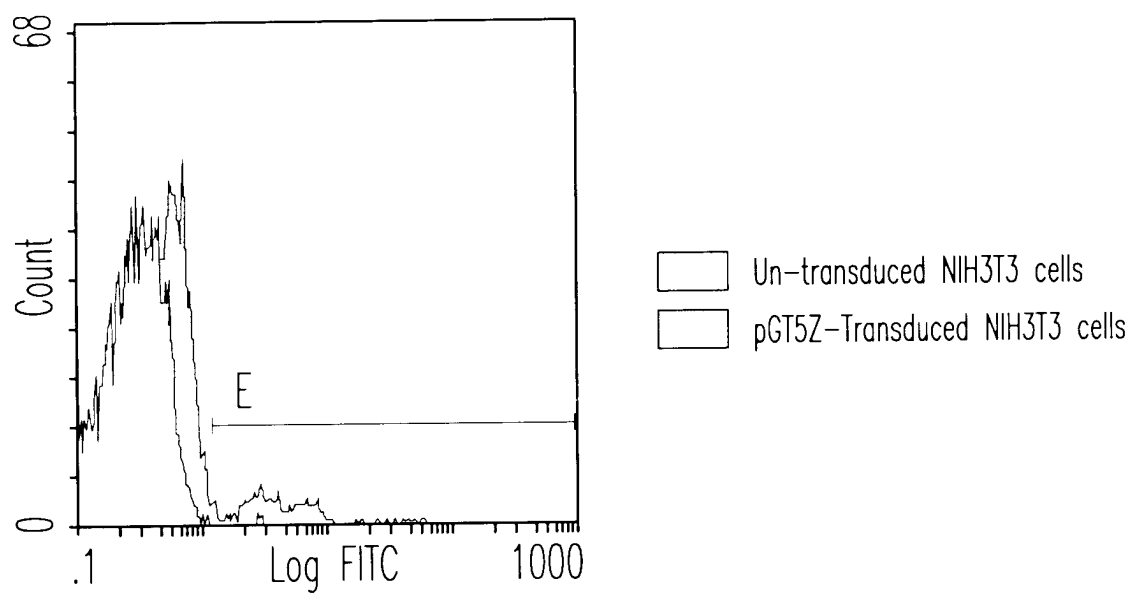
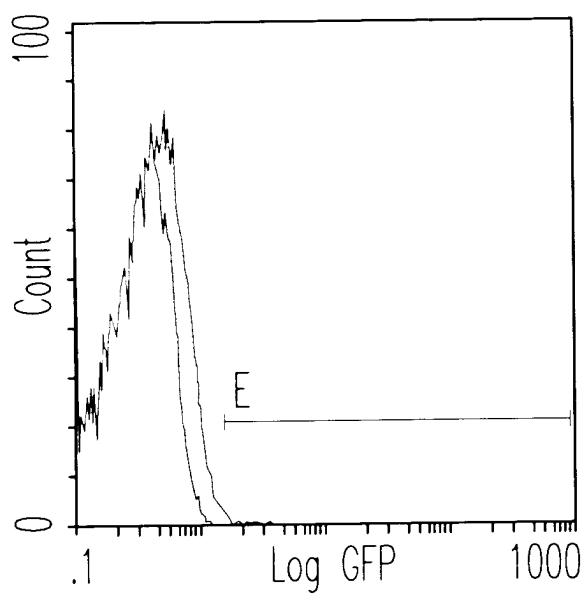
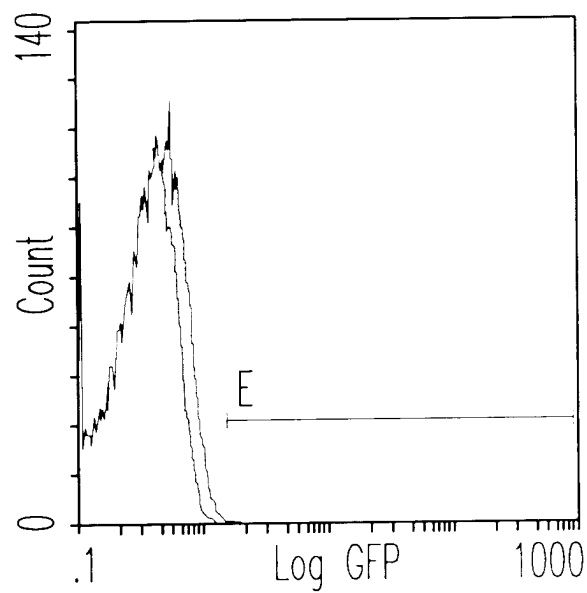


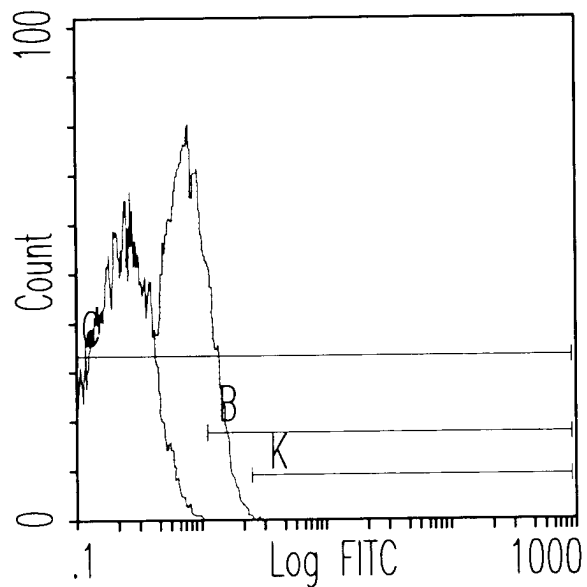
Fig. 11



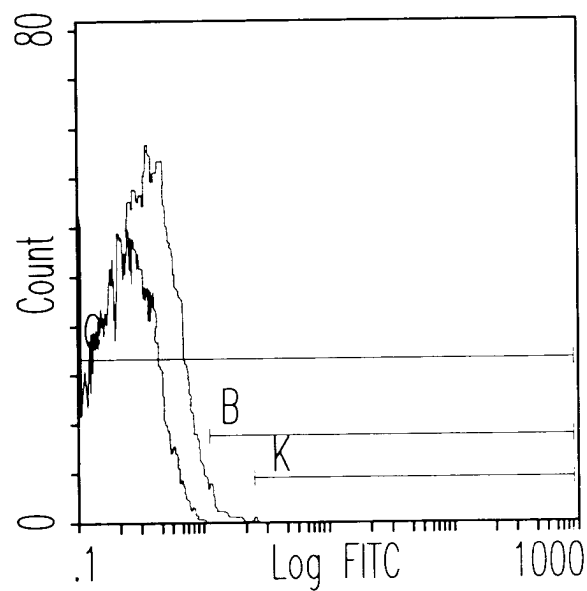
A6P1



C4P2



C8P2



H8P2

☐ Un-transduced NIH3T3 cells
☐ Single-cell clones of transduced NIH3T3 cells

Fig. 12

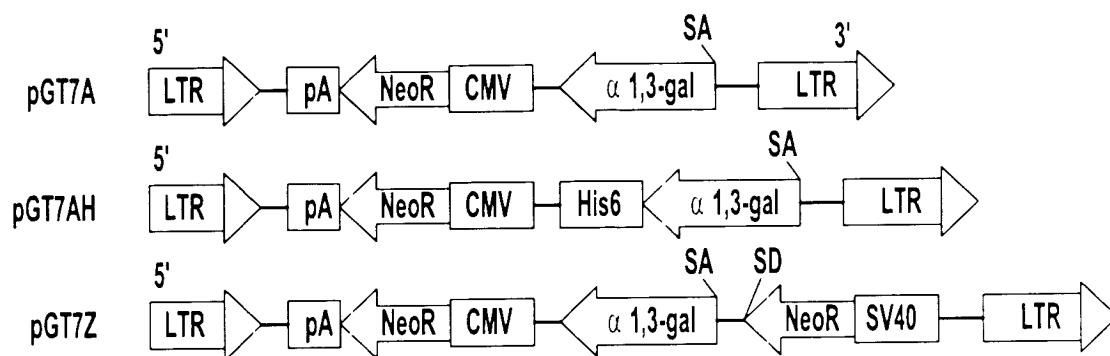


Fig. 13A

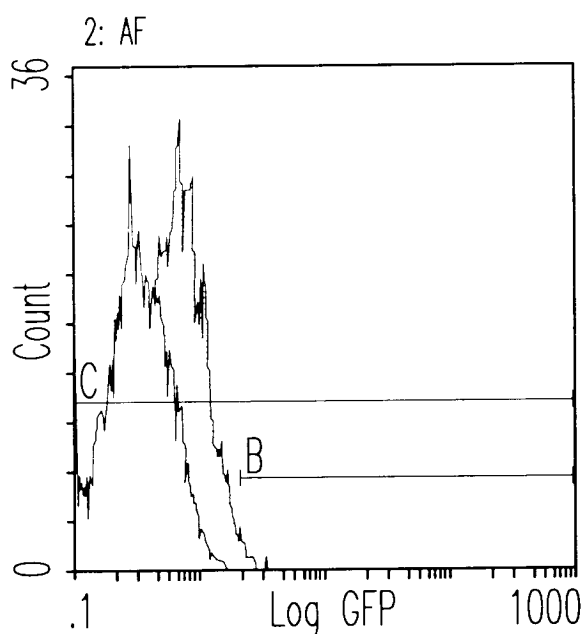


Fig. 13B

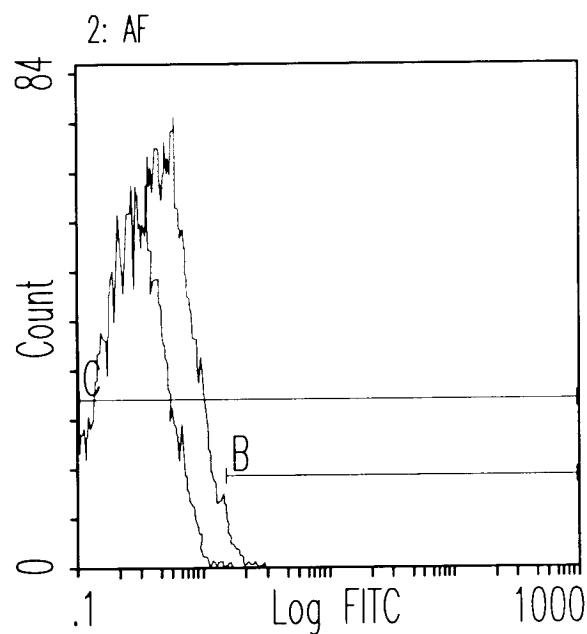


Fig. 13C

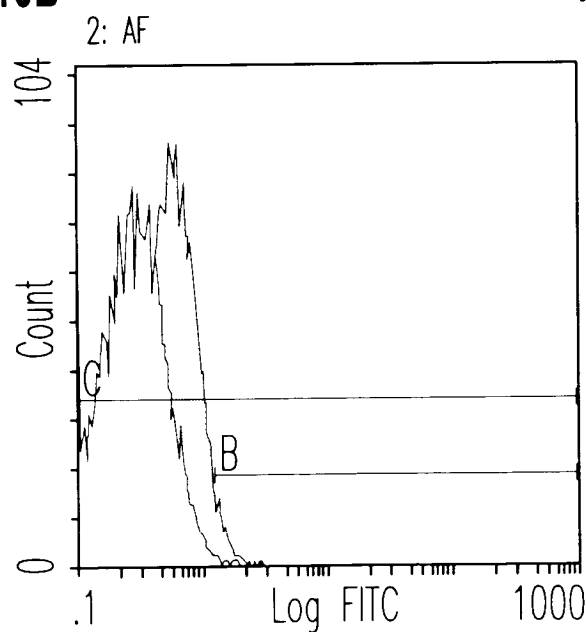
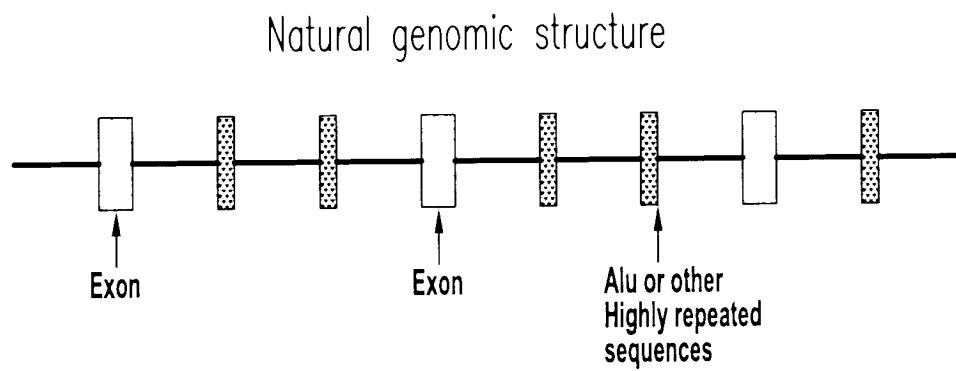


Fig. 13D



Example Vector for Homologous Recombinations

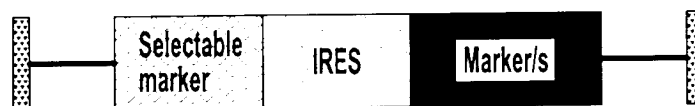
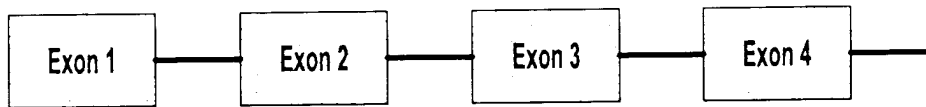
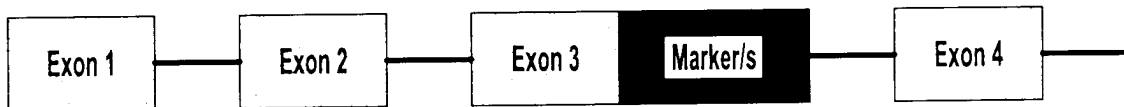


Fig. 14

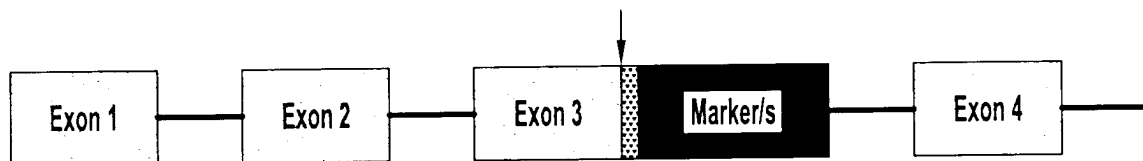
Natural genomic structure



Transfection and integration of vector/s by illegitimate recombination



1bp added to change
reading frame



2bp added to change
reading frame

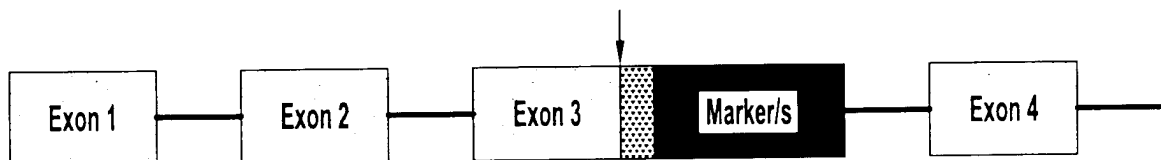
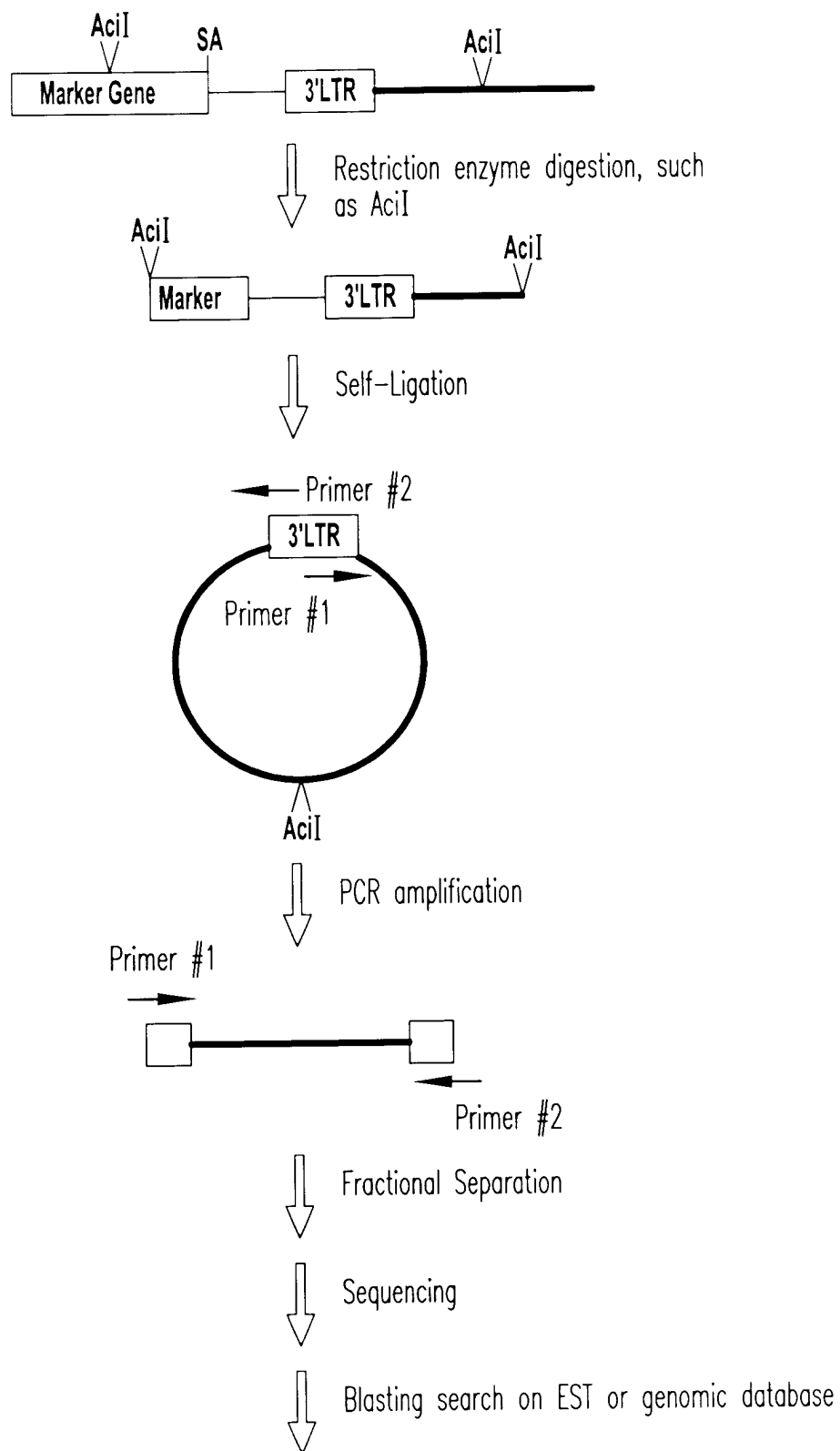


Fig. 15



Gene Expression Profiling Databases on target cells vs. counterpart

Fig. 16

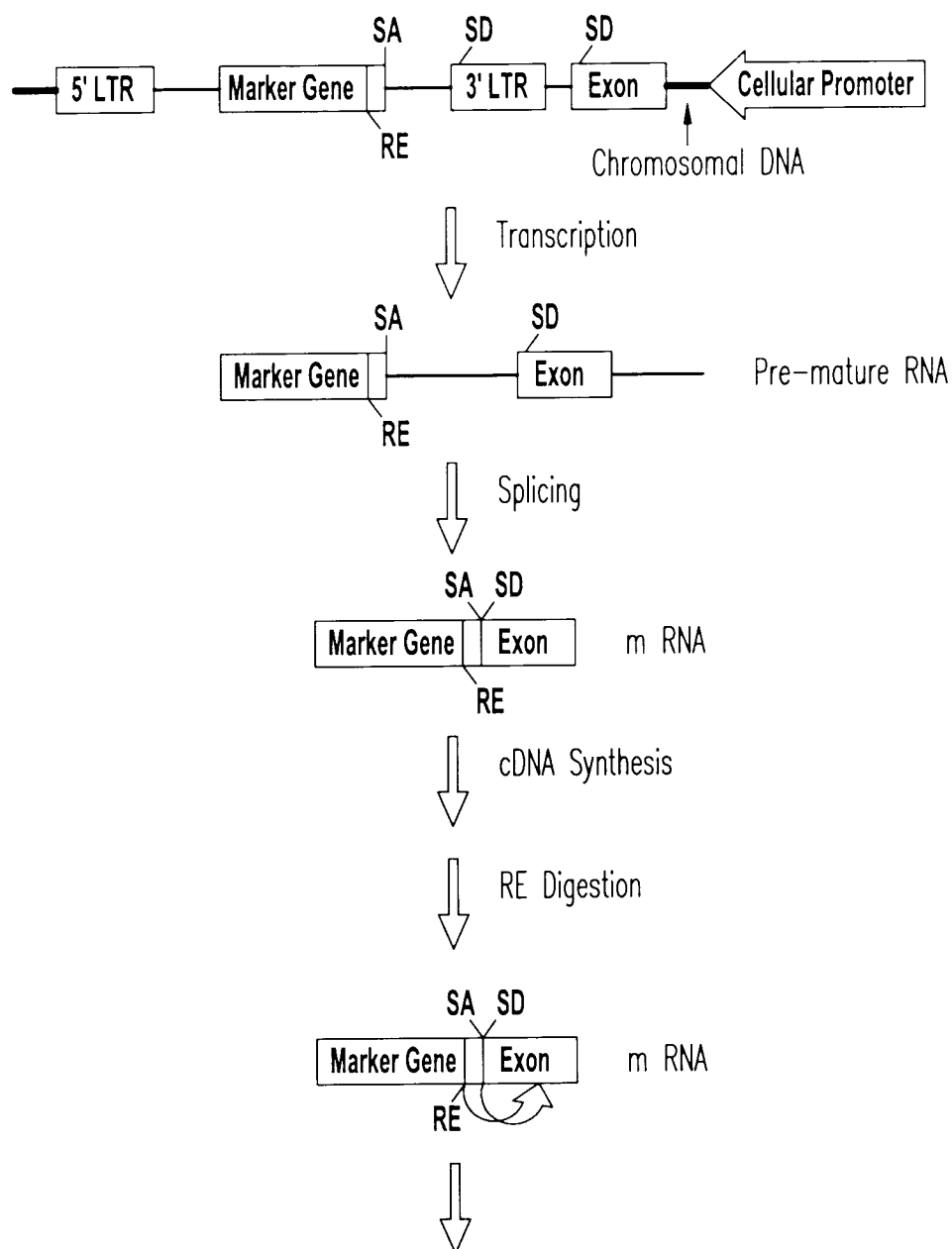
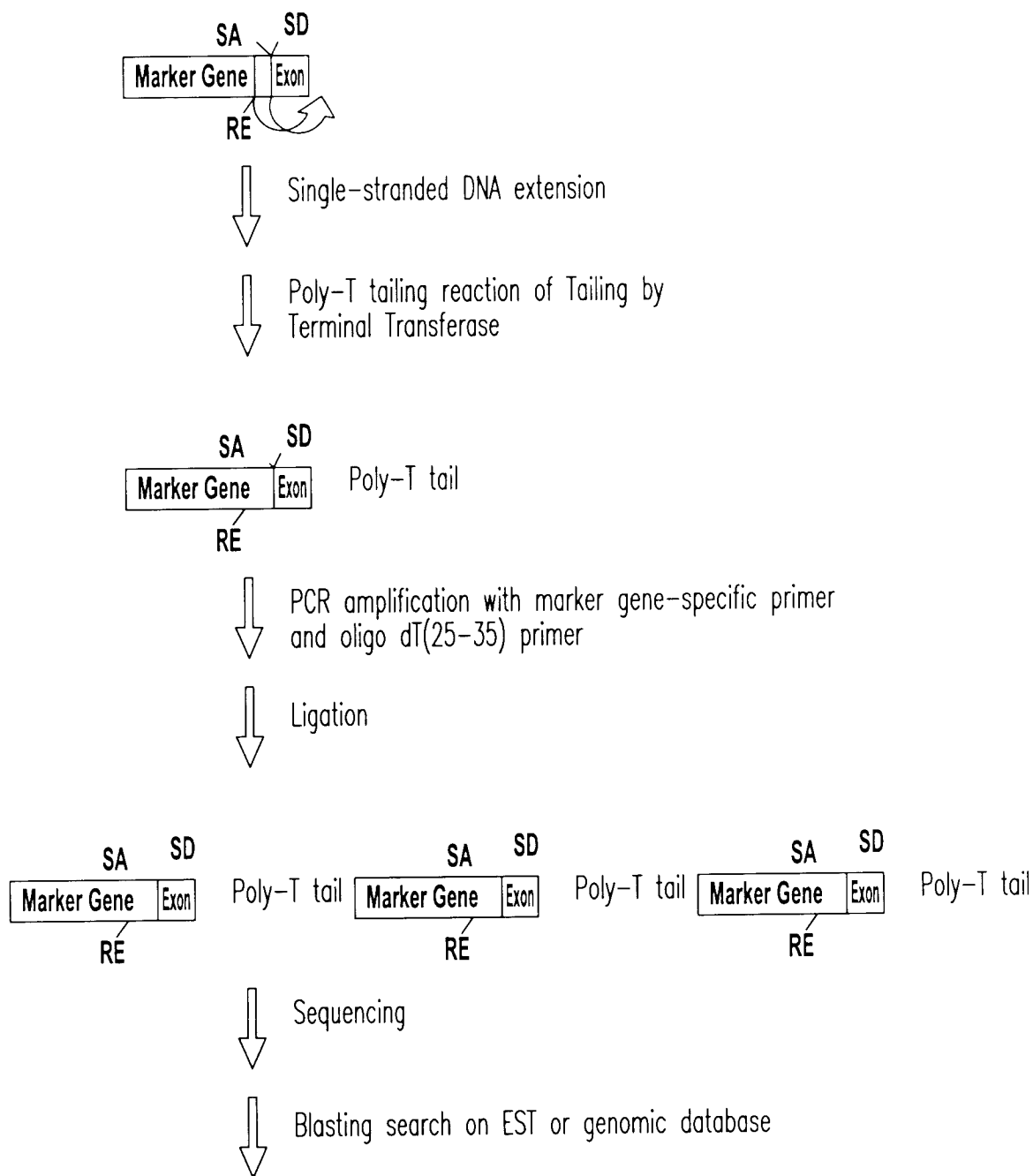


Fig. 17A



Gene Expression Profiling Database on target cells vs. counterpart

Fig. 17B

PROCESS STEP

EXAMPLES

Cell Set



colon cancer/vs.
normal colon cells

or

lung cancer /vs.
normal lung epithelium

or

young organism cell set/vs.
old organism cell set

Vextor Tag



MLLV w/
hrGFP

or

 $\alpha(1,3)$ galactosyltransferase

or

DNA transfection

Measurement



FACS scan for hrGFP florescence

or

ELISA for hrGFP protein

or

FACS scan for $\alpha(1,3)$ GT induced α -gal Ag

or

ELISA of $\alpha(1,3)$ GT protein

or

use of magnetic field or chemiluminescence

or

enzymatic reaction for protein quantitation

PCR



STARS

or

SAVI

or

PCR

Sequencing



pyro sequencing

or

AB1 Machine Sequencing

or

sequencing

Database



cancer cells database

or

normal cell database

Fig. 18A

PROCESS STEP

Search Process



Comparative
Proteonomics



Pathway
Analysis



Target
Validation/
Diagnostics



Drug
Development

EXAMPLES

Parallel BLAST search EST
or
Search Genome database full sequence to define intron/exon
or
Alternative splicing database

Compare colon cancer cell to normal colon epithelium
or
Compare lung cancer cell to normal lung cell

multigene co-variant
or
Specific cell circuit analysis e.g. cell cycle

Monoclonal kb diagnostics Northern analysis, Western analysis
or
DNA assay/gene chip comparison
or
SNP Associations
or
Yeast 2-hybrid fishing for protein partner

monoclonal Antibody treatment
or
small molecule library search and/or
treatment
or
gene therapy
or
anti-sense
or
Ribozyme
or
any other conventional
pharmaceutical drug development

Fig. 18B

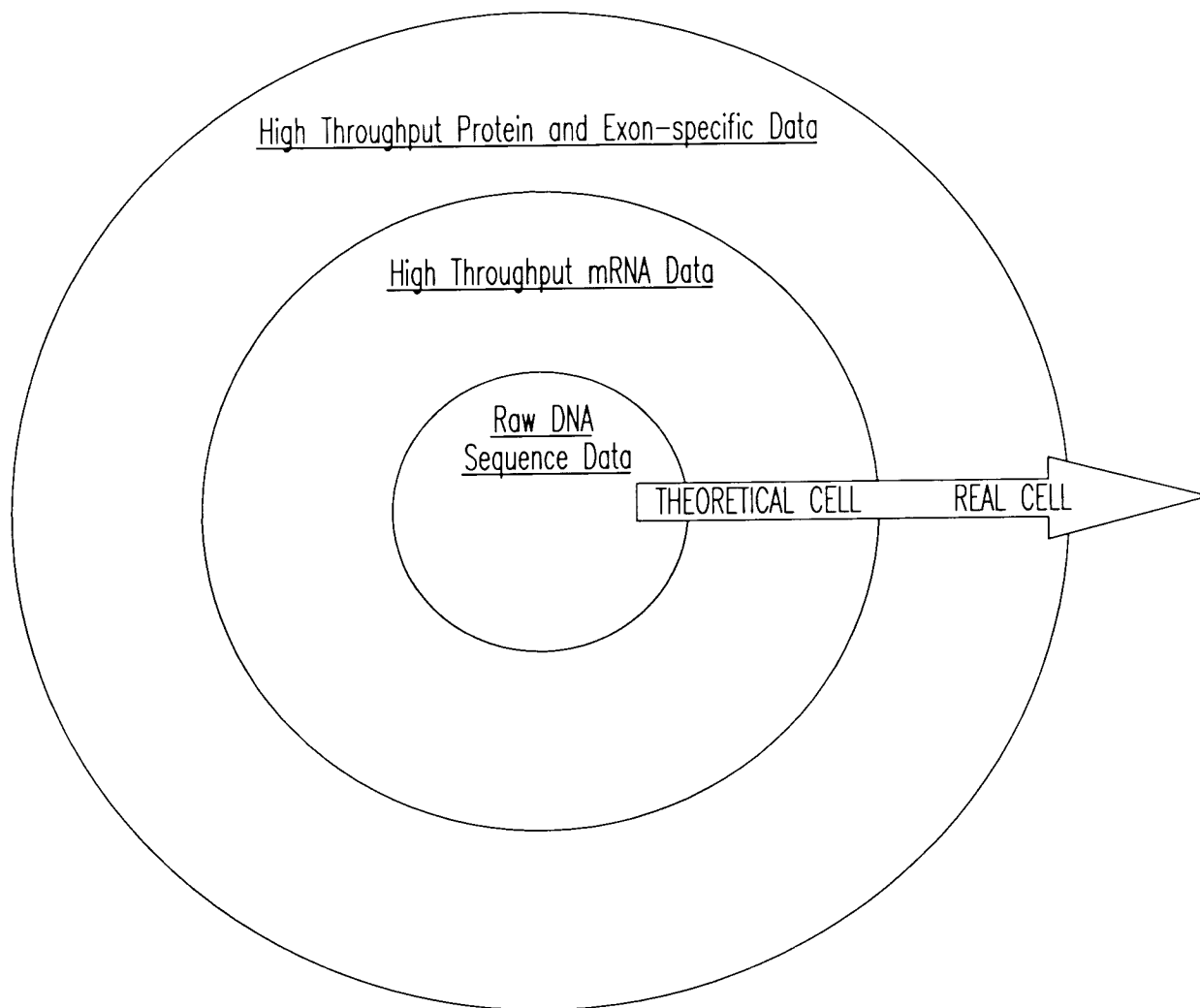


Fig. 19

Validation sequence/Splicing
junction

1 ttnnccgnga aagctcctcg cccttgctca ccattgggatg ccatttecta ggtctgctc

NcoI Gene trapped exon
cloning site of HMGI-C gene

61 ttggcggttt ttctccaatg gtctctgctt tcttctgggc tgcttttagag gggctcttgt

121 ttttgetgcc tttgggtctt cctctgggtc tcttaggaga gggctcacag gttggctctt

181 gctgctgctt cctgggtcgg ccgcgtcctc gcttctgtgg caccggggcg gcaggttgtc

241 cctgggctga tgtggacggc tgcccggcgc cctcaccgcg tgcgctcacc ctgectcccg

301 ccgccgtac cactgcctct cttttttttt tttttttttt tttttgaaan ccccgggnnn

361 nnnnnnnnnn nnnnc

Oligo-dT
primer

EcoRI
cloning site

//

Fig. 20

Validation sequence/Splicing
junction

1 tcngcgacca nctcctcgcc cttgctcacc atgggatgct cccgggtgggtg ggtcgggtggt

NcoI Gene trapped-exon
cloning site

61 ccctgggcag gggctctcaa atcccggacg agcccccaaa tgaaanaccc ccgtcntggg

121 tagtcaatca ctcagaggag accctcccaa ggaacagcga gaccactntt cggatgcana

181 cagcaagagg ctttattggg aatncgggta cccggggcgac ncantctatc ngaagactgg

241 cgttattttt tttntttttt ttttttgaat tncnngggac anccnnctna gnntanctnc

Oligo-dT EcoRI
primer cloning site

301 nctntnnnct nccctcctta cttctnntnt ntn

//

Fig. 21